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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,660	01/23/2006	Benno Ticke	NL 030890	2500
24737	7590	03/20/2008		
PHILIPS INTELLECTUAL PROPERTY & STANDARDS				
P.O. BOX 3001				
BRIARCLIFF MANOR, NY 10510				
EXAMINER				
PENDLETON, DIONNE				
ART UNIT		PAPER NUMBER		
2627				
MAIL DATE		DELIVERY MODE		
03/20/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,660

Applicant(s)

TIEKE ET AL.

Examiner

DIONNE H. PENDLETON

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/23/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1, 9 and 10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jacobs (US 5,802,032)** in view of **Furumiya (US 7,248,552)**.

Regarding claim 1,

JACOBS teaches a method of transforming a first set of write parameters of a write strategy, for recording marks in an information layer ("5" in figure 5) of a record carrier (6) by irradiating the information layer (5) with a pulsed radiation beam (3), at a first recording speed into a second recording speed (column 7:35-36 teaches that write speed is optimized, thereby implying a first and second recording speed) wherein the duration of the write pulses is kept substantially constant in time (column 1:40-50), and the duration of a complete sequence of write pulses for recording a mark is kept substantially constant as a fraction of a reference clock (column 6:5-11).

JACOBS does not clearly teach that the first set of write parameters are transformed into a second set of write parameters prior to recording.

FURUMIYA teaches detecting a first set of write parameters ("9" in figure 1) and transforming them into a second set of write parameters (see output of "24" in figure 1) of said write strategy for recording marks (column 2:63 through column 3:13).

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of JACOBS per the teachings of FURUMIYA, also transforming the detected write parameters detected in the JACOBS invention, for the purpose of compensating for variations in characteristics of optical discs and devices therewith, thereby achieving full operational performance from the optical medium and associated devices.

Regarding claim 9,

JACOBS teaches a device for transforming a first set of write parameters of a write strategy for recording marks in an information layer (5) of a record carrier (6) by irradiating the information layer (5) with a pulsed radiation beam (3) at a first recording speed (R) into a second recording speed (column 7:35-36 teaches that write speed is optimized, thereby implying a first and second recording speed), said device comprising:

first transforming means ("10" in figure 5; also see column 8:51-54) for keeping the duration of the write pulses constant in time and second transforming means ("1" in figure 5; also see column 8:57-67) for keeping the duration of a complete sequence of write pulses for recording a mark constant as a fraction of a reference clock.

JACOBS does not clearly teach that a second set of write parameters are defined from the first set of write parameters via input means for receiving said first set of write parameters and an output means for outputting said second set of write parameters.

FURUMIYA teaches defining a second set of write parameters from the first set of write parameters via input means ("9" in figure 1) for receiving said first set of write parameters and an output means ("24" in figure 1) for outputting said second set of write parameters.

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of JACOBS per the teachings of FURUMIYA, also transforming the detected write parameters detected in the JACOBS invention, for the purpose of compensating for variations in characteristics of optical discs and devices therewith, thereby achieving full operational performance from the optical medium and associated devices.

Regarding claim 10,

JACOBS teaches a recording device for recording marks in an information layer ("5" in figure 1) of a record carrier (6) using a write strategy by irradiating the information layer (5) by means of a pulsed radiation beam (3), each mark being written by a sequence of one or more write pulses, said recording device comprising: a radiation source (2) for providing the radiation beam (3), a control unit (1) operative in controlling the power of the radiation beam (3) and in providing the sequences of pulses for

recording the marks and a selection unit operative in selecting and/or controlling the recording speed (column 7:35-36 implies a "selection unit" by teaching that the write speed is optimized).

JACOBS does not clearly teach a transformation device for transforming a first set of write parameters of a write strategy into a second set of write parameters of said write strategy for recording marks.

FURUMIYA teaches a transformation device ("24" in figure 1) for transforming a first set of write parameters (10) of a write strategy into a second set of write parameters (18) of said write strategy for recording marks.

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of JACOBS per the teachings of FURUMIYA, also transforming the detected write parameters detected in the JACOBS invention, for the purpose of compensating for variations in characteristics of optical discs and devices therewith, thereby achieving full operational performance from the optical medium and associated devices.

Regarding claim 11,

Jacobs teaches a selection unit adapted for controlling the recording speed in accordance with a constant angular velocity operation, a partial constant angular velocity operation, or a **zoned constant linear velocity operation** (column 6:5-30).

Regarding claim 12,

FURUMIYA teaches a recording device as claimed in claim 10, further comprising a storage means for storing at least two sets of write parameter settings for recording marks at different recording speeds, said transformation device being further operative in selecting the corresponding set of write parameter settings from said storage means in accordance with to the selected recording speed (Column 3:13-25).

2. **Claims 2 and 6-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jacobs (US 5,802,032)** in view of **Furumiya (US 7,248,552)**, as applied to claim 1 above, and further in view of **Tabata (US 2006/0140094)**.

Regarding claims 2 and 6,

The combined teachings of JACOBS and FURUMIYA, teach the method according to claim 1.

JACOBS and FURUMIYA do not clearly teach an even mark having a time length of nT , where n represents an integer value equal to 4, 6, 8 or 10, and T represents the length of one period of the reference clock, is written by a sequence of $n/2$ write pulses, an odd mark having a time length of nT , where n represents an integer value equal to 5, 7, 9 or 11, is written by a sequence of $(n-1)/2$ write pulses, and a mark having a time length of $3T$ is written by a single write pulse.

TABATA teaches an even mark having a time length of nT , where n represents an integer value equal to 4, 6, 8 or 10, and T represents the length of one period of the reference clock, is written by a sequence of $n/2$ write pulses, an odd mark having a time length of nT , where n represents an integer value equal to 5, 7, 9 or 11, is written by a sequence of $(n-1)/2$ write pulses, and a mark having a time length of $3T$ is written by a single write pulse (see paragraphs [0017-0019] see, **ODS '00**).

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Jacobs, Furumiya and Tabata, recording in the Jacobs invention such that odd and even marks are written by a sequence so defined, thereby providing a consistency in the shape of marks when recording at increased speeds.

Regarding claim 7,

The combined teachings of JACOBS, FURUMIYA and TABATA, specifically JACOBS, teaches the duration of a complete sequence of write pulses for writing a mark having a time length of nT , where n represents an integer value equal to 4, 6, 8 or 10, and T represents the length of one period of the reference clock, is equal to $(n - \text{Even})T$ (JACOBS teaches using $(N-2)$ write pulses for recording an NT mark in column 3:32-34, wherein 2 is constant), and the duration of a complete sequence of write pulses for recording a mark having a time length of nT , where n represents an integer value equal to 5, 7, 9 or 11, is equal to $(n - \text{Odd})T$ (column 3:32-34).

JACOBS does not clearly teach that the subsequent cooling gap for recording a mark having a time length of $3T$ is equal to $(3-\Theta_3)T$.

However, Tabata teaches that the duration of a mark having the length of $3T$ is a single write pulse, as recited, interpreted as teaching the expression $(3-\Theta_3)T$ or an equivalent thereof.

Regarding claim 8,

Tabata teaches Θ_{odd} is in a range from $6/8T$ to $10/8T$, in particular substantially equal to $8/8T$ (see paragraphs [0017-0019] see, **ODS '00**).

The combined disclosures of Jacobs, Furumiya and Tabata, do not specifically teach that Θ_{even} is in a range from $5/8T$ to $9/8T$, in particular substantially equal to $7/8T$, or that Θ_3 is in a range from $5/8T$ to $9/8T$, in particular substantially equal to $7/8T$.

However, it would have been obvious for one of ordinary skill in the art at the time of the invention to assign any variety of reasonable values for Θ_{even} or Θ_3 , for the purpose of providing consistency in the shape of marks when recording at increased speeds.

3. **Claims 3-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jacobs (US 5,802,032)** in view of **Furumiya (US 7,248,552)** and **Tabata (US 2006/0140094)** and further in view of **Ohno (US 2004/02488036)**.

Regarding claim 3,

The combined teachings of JACOBS, FURUMIYA and TABATA, teach the method according to claim 2. JACOBS, FURUMIYA and TABATA do not clearly teach a relationship between the length of the last write pulse of the even and odd mark.

OHNO teaches that a last write pulse in the sequence of write pulses for writing an odd mark is a defined period longer than a last write pulse in the sequence of write pulses for writing an even mark, and a gap preceding the last write pulse in the sequence of write pulses for writing an odd mark is a defined period longer than a gap preceding the last write pulse in the sequence of write pulses for writing an even mark (see [0228 and 0260]).

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the combined teachings of Jacobs, Furumiya and Tabata, per that of Ohno, wherein the last write pulse of an odd mark is a defined period longer than a last write pulse in an even mark, for the purpose of better controlling rear end jitter.

Regarding claim 4,

OHNO teaches said period is kept constant in time and is within a range from 1 to 5 ns, in particular within a range from 2 to 4 ns (see recitation of claim 48; also see paragraphs [0023-0025]).

Regarding claim 5,

OHNO appears teaches the duration of the write pulses, except for the last pulse for writing an odd mark and except for the write pulse for writing a mark having a time length of $3T$, is in a range from 5 to 10 ns, in particular substantially equal to 7.2 ns, the period has a duration in a range from 2 to 5 ns, in particular substantially equal to 3.6 ns, and the duration of the single write pulse for writing a mark having a time length of $3T$ is in a range from 8 to 15 ns, in particular substantially equal to 12.6 ns . (see paragraphs [0202-0260]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE H. PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. H. P./
Examiner, Art Unit 2627
Dionne Harvey Pendleton
/Wayne R. Young/
Supervisory Patent Examiner, Art Unit 2627